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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/516,176	03/01/2000	Takayoshi Sasaki	PM 266297	3428

7590 10/13/2010
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EXAMINER

LE, HOA T

ART UNIT	PAPER NUMBER
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1788

MAIL DATE	DELIVERY MODE
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10/13/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/516,176	Applicant(s) SASAKI ET AL.	
	Examiner H. (Holly) T. Le	Art Unit 1787	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-15,18-21,23 and 25 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 10-15 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,20,21 and 23 is/are allowed.
- 6) ☒ Claim(s) 4-6,8,9,18,19 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. In view of the RCE and petition to withdraw from issue, the pending claims are: 1, 2, 4-15, 18-21, 23 and 25. Claims subject to Examination: 1, 2, 4-6, 8, 9, 18-21, 23 and 25. Claims withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention: 7 and 10-15,

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 4-6, 8 and 9 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The step of immediately contacting the sprayed exfoliated sol with hot air is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). As described in the instant specification, spraying an exfoliated titania sol does not yield hollow powder but rather fine liquid droplets. Hollow powder can only be formed if the droplets immediately contacted with hot air at a temperature range sufficient to evaporate of water from the inside of the liquid droplets. See instant specification, page 8, lines 15-27 and page 10, lines 5-11. Accordingly, without this water-evaporation step, by hot air, no hollow powder can be formed. Therefore the claims 4-6, 8 and 9 which fail to include this critical step are based on a non-enabling disclosure.

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4. Claim 25 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for laminated titanium dioxide particles, does not reasonably provide enablement for any laminated oxide particles as claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. As described in the instant specification, laminated oxide particles having specific dimensions stuck on a titanium oxide shell are from titania sol, just they are titania particles, not just any oxide particles. See instant specification, page 10, line 24 to page 11, line 11. However, claim 25 describes laminated oxide particles on the shell, and thus claim 25 is broader than the enabling disclosure of laminated titania particles on the shell of the hollow powder.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. In claim 18, "thin flaky titanium oxide powder" renders the claim indefinite because "thin" is a relative term. The specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "thin" is not defined by the claim or the specification because the step of pulverizing fine hollow powder would not define how "thin" the thickness of the resulting powder is.

Allowable Subject Matter

8. Claims 1, 2, 20, 21 and 23 are allowed.
9. The following is an examiner's statement of reasons for the indication of allowable subject matter: None of the prior art references, singly or combined, teaches or suggests hollow particles having the shell structure as claimed, i.e. laminated titanium oxide particles stuck together. EP 0 601 594 ("EP'594") teaches hollow particles comprising fused or sintered titanium oxide particles in the shell and having the shell/wall thickness ratio within the claimed range. However, the titanium oxide particles on the shell of EP'594 powder are not laminated particles. EP'594 teaches a spraying method to form the hollow particle, but either titania sol or a dispersion of precursor of titania is used in spraying instead of an exfoliated titania sol. Accordingly, laminated titanium oxide particles cannot be formed on the shell as required in claims the instant claims because the titanium oxide used in spraying taught by EP'094 is not a suspension of exfoliated titania.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. (Holly) T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 12:30 p.m. to 9:00 p.m. (EST), Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. (Holly) T. Le/
Primary Examiner, Art Unit 1787

October 8, 2010